



COUNTY OF SAN DIEGO
Great Government Through the General Management System – Quality, Timeliness, Value
DEPARTMENT OF HUMAN RESOURCES

CLASS SPECIFICATION

CLASSIFIED

ELECTRONIC INSTRUMENT TECHNICIAN I
ELECTRONIC INSTRUMENT TECHNICIAN II

Class No. 003848
Class No. 003844

■ CLASSIFICATION PURPOSE

To maintain and operate air monitoring stations; install, troubleshoot and repair air pollution monitoring equipment, ancillary support equipment, and meteorological instruments in a workshop environment or in the field; conduct preventive and corrective maintenance at air quality monitoring stations within San Diego County; perform related work and other duties as required.

■ DISTINGUISHING CHARACTERISTICS

Positions in this class series are allocated to the Air Pollution Control District (APCD), in the Monitoring Technical Services Division.

Electronic Instrument Technician I:

This is the entry-level class in the Electronic Instrument Technician series. Under direct supervision, an Electronic Instrument Technician I installs, tests, operates, maintains, and repairs air-monitoring equipment in the shop or in the field.

Electronic Instrument Technician II:

This is the journey-level class in the Electronic Instrument Technician series. Under general supervision, an Electronic Instrument Technician II performs the full range of work in assembling, installing, testing, operating, and repairing a wide variety of air monitoring equipment and ensures quality data is collected from air monitoring stations. This class differs from the next higher level, Supervising Electronic Instrument Technician, in that the latter provides first-line supervision over Electronic Instrument Technicians.

■ FUNCTIONS

The examples of functions listed in the class specifications are representative but not necessarily exhaustive or descriptive of any one position in the classes. Management is not precluded from assigning other related functions not listed herein if such functions are a logical assignment for the position.

Electronic Instrument Technician I

Essential Functions:

1. Maintains and operates air monitoring stations.
2. Inspects, maintain, repairs, adjusts, and modifies air quality monitoring field equipment and meteorological instruments.
3. Uses a variety of tools and test equipment including: digital voltmeters, frequency counters, strip chart recorders, oscilloscopes, and function generators.
4. Uses data loggers and computers to collect data from air monitoring equipment.
5. Reviews and edits data from the data acquisition system and retrieves and loads sample media.
6. Tabulates information from instrument charts or displays.
7. Reviews data to determine normal or abnormal trends in air quality.
8. Prepares reports, charts, graphs, tables, and calculations using a variety of mathematical methods.
9. Orders and fabricates instrument parts.
10. Maintains inventory records and work activity logs.
11. Operates personal computers used at air monitoring stations to retrieve data and evaluate equipment.

12. Retrieves and loads various sample collection media.

Electronic Instrument Technician II

Essential Functions:

All the functions listed above and

1. Assembles and performs acceptance checks on air monitoring stations, new equipment, and special purpose or applications equipment.
2. Conducts training on air monitoring equipment.
3. Tests, troubleshoots, and repairs the full range of air quality monitoring equipment.
4. Configures modems, personal computers and establish communications with remote stations.
5. Serves as lead in monitoring special projects that may be complex.

■ **KNOWLEDGE, SKILLS AND ABILITIES**

Knowledge of:

The following apply to both classes:

- Electrical, mechanical, chemical, pneumatic principles related to air quality monitoring instruments.
- Solid state components.
- Analog and digital equipment.
- Testing analysis techniques related to electronic instruments.
- Mathematics (formulas, exponents, powers, roots, and binary numerals).
- Safety methods and procedures applied to shop equipment repair, using flammable and compressed gas.
- Electronic instrument installation, interfacing, and monitoring methods and techniques.
- Computer operations.
- Methods and techniques used in calibrating air quality equipment, installing stations, and testing new or specialized air monitoring equipment.
- Air pollution control terminology.
- Air pollution control equipment design, operation, and use.
- County customer service objectives and strategies.

Skills and Abilities to:

The following apply to both classes:

- Install, inspect, adjust, calibrate, test, operate, maintain, and repair air pollution monitoring and meteorological equipment and instruments.
- Use a variety of tools including digital voltmeters, frequency counters, strip chart recorders, and oscilloscope and function generators.
- Collect, tabulate, and review data from air monitoring instruments to determine normal or abnormal trends in air quality.
- Prepare reports, charts, graphs, tables, and calculations using a variety of mathematical methods (formulas, exponents, powers, roots, and binary numerals).
- Maintain inventory records and work activity logs.
- Operate personal computer for data retrieval and interface to evaluate station equipment.
- Maintain and identify less complex computer hardware and software problems.
- Understand and follow written directions and verbal instructions in English.
- Communicate effectively with a variety of individuals representing diverse cultures and backgrounds and function calmly in adverse situations, which require a high degree of sensitivity, tact and diplomacy.
- Treat County employees, representatives of outside agencies and members of the public with courtesy and respect.
- Provide prompt, efficient and responsive service.
- Exercise appropriate judgment in answering questions and releasing information; analyze and project consequences of decisions and/or recommendations.

Electronic Instrument Technician II (in addition to the above):

- Write standard operating procedures (SOP's).
- Assemble and perform acceptance checks on air monitoring stations and special purpose/applications equipment.
- Calibrate air quality testing equipment.
- Interpret and apply the rules and guidelines of the Code of Federal Regulations (CFR).
- Comprehend physics and chemistry as applicable to electronic air monitoring equipment.
- Provide training to subordinate Electronic Instrument Technicians and support staff.

- Work independently
- Troubleshoot and repair the full range of air quality monitoring equipment.

■ EDUCATION/EXPERIENCE

Education, training, and/or experience that demonstrate possession of the knowledge, skills and abilities listed above. Examples of qualifying education/experience are:

Electronic Instrument Technician I:

1. An associate's degree from an accredited college or university, in electronics, OR
2. One (1) year of experience installing, inspecting, operating, and repairing analog and/or digital electronic equipment and recording devices for an industrial or public service agency; AND thirty (30) semester units of college level course work in electronics or a closely related field.

Electronic Instrument Technician II:

1. Three (3) years of experience installing, inspecting, operating, and repairing analog and digital electronic equipment and recording devices for an industrial or public service agency. Previous experience must have included inspecting, operating, and repairing air quality monitoring equipment, OR
2. Two (2) years of experience installing, inspecting, operating, and repairing analog and digital equipment and recording devices for an industrial or public service agency, AND, thirty (30) semester units of college level course work in electronics or a closely related field. Previous experience must have included inspecting, operating, and repairing air quality monitoring equipment, OR
3. Two (2) years of experience as an Electronic Instrument Technician I for the County of San Diego Air Pollution Control District.

■ ESSENTIAL PHYSICAL CHARACTERISTICS

The physical characteristics described here are representative of those that must be met by an employee to successfully perform the essential functions of the classifications. Reasonable accommodation may be made to enable an individual with qualified disabilities to perform the essential functions of a job, on a case-by-case basis.

Must have adequate color vision to perform duties. Must be able to lift and transport up to 75 lbs (i.e., gas cylinders and air conditioners). Frequently climb towers and ladders.

■ SPECIAL NOTES, LICENSES, OR REQUIREMENTS

License

A valid California class C driver's license, which must be maintained throughout employment in this class, is required at time of appointment, or the ability to arrange necessary and timely transportation for field travel. Employees in this class may be required to use their own vehicle.

Certification/Registration

None Required.

Working Conditions

Work outdoors in all types of weather conditions. Work with flammable and compressed gases and electrical/electronic circuits up to 7,000 volts. Occasional exposure to ozone and other gaseous fumes. Must be able to lift and transport up to 75 lbs for approximately 30 feet.

Background Investigation

Must have a reputation for honesty and trustworthiness. Misdemeanor and/or felony convictions may be disqualifying depending on type, number, severity, and recency. Prior to appointment, candidates will be subject to a background investigation.

Probationary Period

Incumbents appointed to permanent positions in these classes shall serve a probationary period of 6 months (Civil Service Rule 4.2.5).

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